The Shape of the Thing the Universe is Inside of

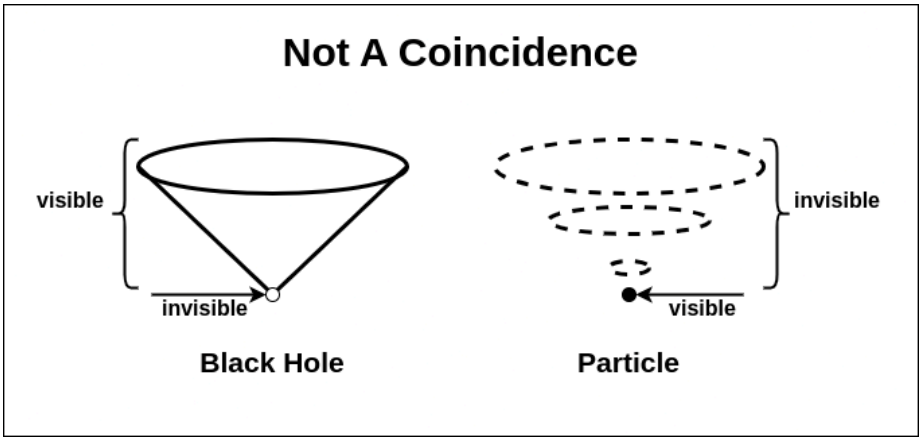
WARNING: I'm a seer, not a scientist; I'm an entertainer, not an expert. With a sword.

Abstract

What the patient is saying, but is oblivious to:

> The universe isn't everything. It's a cell inside something bigger. Energy is passing in and out of the universe's outer membrane at both its top and bottom. All chunks of our 3D energy that get too big disappear into a 2D universe, and all chunks that get too small disappear into a 4D universe. This is incredibly obvious once you see it, and solves the biggest problem in physics.

The diagram the patient describes but doesn't see, showing those places where energy passes in and out of the universe:



Diagnosis: Complexity addiction, math blindness, humanist syndrome, herd anxiety, overwork.

Action Taken: Informed patient that particles are the bottoms of very small 4D black holes.

Reaction: Deep denial. Therapist doesn't understand *shit*. Plans to find new therapist immediately.

Session Notes

Black Holes: Collapsing into a Point

When patient was asked, “What’s the coolest thing out there?”, response was “a black hole.”

When asked for the layman’s description of a black hole: “It’s a drain out of which the universe is emptying. It’s essentially a perpetually flushing toilet in the sky. Everything that wanders into the black hole’s vicinity—planets, stars, galaxies, you name it—it all gets sucked down into it, never to be seen again.”

When asked where all the poop goes: “Well, nobody really knows for sure. Due to the nature of a black hole, we can’t see very far down *into* it. And that’s because what’s pulling everything down is increasingly excessive *gravity*; at some point the gravity gets so extreme that even *light* can’t escape its grip. If it *could*, black holes would be the *brightest* things in the sky, given all they’ve swallowed. But all we see is a spooky nothingness when we look into them.”

When asked why the gravity is getting so extreme inside the black hole: “The concept of a black hole is implicit in the math of Einstein’s masterwork, The General Theory of Relativity, which is essentially our updated definition of *Newton’s* gravity. Einstein’s math says that the bigger (actually, denser) something gets, the more gravity squeezes that thing in towards its center. And once it passes a certain density threshold, *it collapses in on itself*, creating a black hole. So, to answer your question, the gravity is increasing like crazy because something out there got really, really big—and therefore really, really dense. *Too* dense.

When asked where *Einstein’s math* says all the poop goes: “Einstein’s math says it all coalesces into a single point, like the ultimate collapsible umbrella.”

When pushed on this most unsatisfying of explanations, patient replied with an even more unsatisfying one: “Well, not exactly a point. It’s a point that’s forever shrinking into a smaller and smaller point. Or you could say that everything is falling into a forever deepening and narrowing hole. It’s literally a fall into infinity.”

Particles: Exploding from a Point

When asked about the coolest thing at the *bottom* of the universe, down our most powerful *micro*scopes, patient replied: “Particles. Little, hard unbreakable nuggets of energy. They’re the smallest things that exist and literally everything is made out of them. They’re cool because when they’re unattached they move as unobservable waves. It’s only when they’re attached to some other nugget that they’re nuggets.”

Unobservable waves??? “Yeah, like radio waves; like what you see in a drawing of a transmitting radio tower: concentric circles extending out from a point at the top of the tower. Or like what you see when a pebble is dropped in still water: ripples.”

You say the unattached nuggets *move as* waves, not *cause* them? “That’s right. They *move as* waves. They *become* waves—invisible waves.”

The foundational building blocks of the universe move from place to place as *invisible waves*? How does that work? “No idea. Just does. We don’t ask why, or need to. If our mathematics is precise (enough), that’s good enough. Speculating on what we can’t see isn’t science.”

What causes a wave to turn back into a nugget? “It comes into contact with some other nugget—a particle that itself is not currently existing as a wave—because it’s attached to some other nugget.”

Where *are* the waves if you can’t see them? Where…what…are they…moving…*through*? “They’re in *fields*.”

Well, where are the fields, then? “They’re just there. You can’t see ‘em. But they’re there all right. Trust me.”

How do you know they’re moving as waves if you can’t see them? “We did experiments in which we marked the reappearance locations of thousands of solo nugget flights, all leaving from the same point, at the same speed, in the same direction. We observed that they didn’t always go in a straight line; they reappeared slightly randomly, and further and further *away* from the straight line as time went by. So the shape we saw emerge over time as we did the plotting was a *ripple—a wave*. Expansion outward in all directions from a central point.”

Therapist’s Interpretation

The universe has very clearly defined limits on the size of objects that can exist inside it. Max/min constants, if you will. If an object gets so big that it passes the *upper* limit, it collapses *into a* point and disappears—poof!—it’s a black hole. If an object gets so *small* that it slips under the *lower* limit, it explodes *from a* point and disappears—poof!—it’s a particle in motion as waves.

Black holes and particles are mirror images of each other. They disappear into each other’s shapes. And when I say “they disappear” I mean that they drop completely off the radar. (Where’d it go? It was just there a second ago.) Detecting the exact positions of particles as they move is literally beyond our capabilities. And it’s not just radar that fails (they didn’t actually try radar, but you get the point)—*no* known instrumentation allows us to see particles as they move. They have *escaped* the universe in a very real sense. We have to bring them back *inside* in order to say precisely where they are.

When it comes right down to it, there’s really not a whole lot of distance between saying that some thing is “*inside* our universe (in “fields”), existing in many places at once, while invisible and not subject to time” and saying it’s “disappeared into some *other* universe where it’s turned into something so preposterous it couldn’t *possibly* exist in ours.”

A black-hole/particle (two terms for the same thing) is an energy capillary which strips/adds a dimension from/to the energy passing through it. The energy is passing through it in the first place because the energy has become too big/small for our 3D universe, so it slips off into a universe that can accommodate its size/speed.

Discussion

Just a Bigger Cell

Imagine that you, the reader, and a physicist are shrunken down and placed as tiny little occupants inside a single cell somewhere deep down inside a human body. Down there, we've made you much smaller than the cell you're in, *so* much smaller in fact, that the cell is effectively a universe to you. Now, doesn't the physicist give you the same answers to the same questions down there?

We know that many types of cells in a body communicate with their neighboring cells through holes in their membranes. Let's assume that such communication is happening in the cell we've put you inside of. The places *where* it would be happening would be so far away from the two of you that they would appear as black holes in the physicist's telescope.

The physicist would dismiss the possibility of there being other cells bordering the one you're in. The physicist would have equations that described and predicted all the comings and goings, to a certain degree anyway, but the physicist would never say that anything is *leaving* the cell. Because then you would ask, where does it go, and the physicist would have to say, how the hell should I know, and the physicist does not want to say that.

Life at the Top

But there's an even *deeper* reason for the physicist's black-hole blindness that even the physicist isn't aware of. As a humanist, the physicist unconsciously thinks: if humans can't *see into* neighboring universes, what would be the point of putting them there?

Consider this analogy. The Simulation Hypothesis asks: what if it's possible to create a *simulation* of a universe from inside some other universe? If it *is* possible, then that would mean *we* could be inside such a simulated universe—inside someone else's computer program. But it's also possible that we're at the very top, that we're in the *real* universe, and that we'll be the first to create a simulated universe, if it can be done at all. Let's assume that it *can* be done. Now, because this is a recursive thing, (that is, the embedding of universes can go on forever), the odds of us being at the top are 1-in-infinity—making it virtually *impossible* for us to be at the top. Unless, of course, we're God's children and He *wants* us at the top.

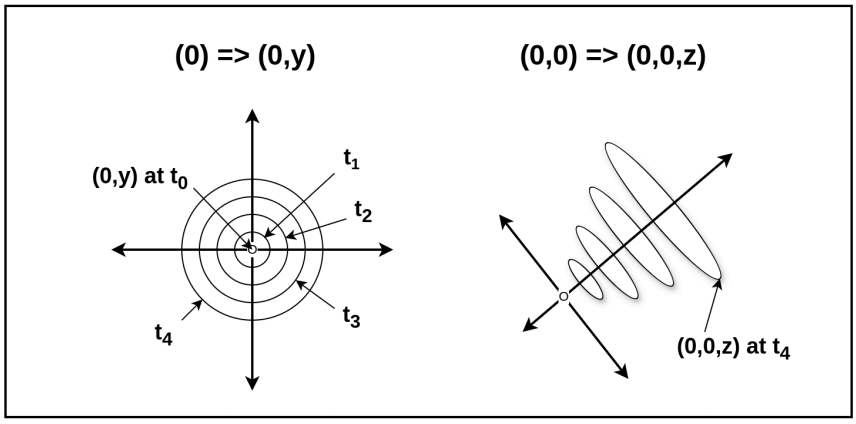
The same logic applies to *the composition* of the universe. Why should we be at its outer edge? If there are planets inside solar systems, and solar systems inside galaxies, and galaxies inside galaxy clusters, and galaxy clusters inside the universe—then why shouldn't the universe also be something inside something else? Especially when we've just seen the mathematical magic

happening at its borders that looks suspiciously like energy coming and going. The math be damned. Shit is *disappearing*.

For 100 years we've been telling ourselves that black-hole energy and particle energy aren't going anywhere (except "into the mathematics (ie, into infinity/'fields')") because there's nowhere *for* them to go. We're at the top, baby!

We see a person walk through a door we can't open and assume they're in a closet.

Jumping a Dimension



There's some very elementary math at the end of this section, which I can't even assure you is correct because I'm a math ignoramus. (Which I'm not proud of, but it does give me a certain "advantage".) So feel free to skip everything below the second horizontal divider line. You'll know when you get there.

All the math is trying to say is that when a particle in one universe jumps up to its next-higher dimensional universe—because it's become completely unattached in the universe it's in and is now too small/fast to remain there—it doesn't get transformed into the upper universe's version of a particle. No, it *expands* as it moves through that upper universe, manifesting itself across its newly-acquired dimension, *as a growing circle*, or sphere, or whatever the perfectly round object in that universe is. It's as if space were being blown into the point *from its cente*r as it moves through that upper universe. (This is what the physicist teases out as ripples/waves in the clever experiments.)

Viewed from inside the upper universe, the expanding point—the arriving *particle*—is a black hole.

Now, if, in your mind as you read that description, you saw a bubble rising up through boiling water, you got it exactly right. The particle has *boiled off* into an (n+1)-dimensional universe that its former *(n)*-dimensional universe *sits inside of*.

The particle will later reappear in the lower universe as a nugget at a single point in space if/when the bubble pops. That reappearance point isn't necessarily at the bubble's center. It can

be at *any* point that's contained within the bubble. (Or *on* it? I really don't know. But it's not important.)

So it turns out that quantum physics isn't so spooky after all. Energy (itself) (literally) *boils off* (into another universe) as *bubbles*, and returns as *popped* bubbles. You got that right: energy boils like water boils. *Exactly* like water boils.

The following sentence belongs at the end of the previous paragraph, but it's been set apart here because it's also what's emblazoned on Slippin Fall's sword (Statue builders take note!):

> *Well, whaddaya know; what happens above, happens below.*

In that other, 4D, "quantum", universe, all the same rules apply as in ours, but the biggest/coldest/slowest thing that exists there is smaller/hotter/faster than our smallest/hottest/fastest thing here. You can break your brain thinking about what that means for the concept of time when energy moves back and forth between the two universes.

Universes occupy *bordering numerical ranges*—on a *thermometer*. The borderline between the ranges is *a boiling point* for the lower range (for our 3D universe, say), and *a freezing point* for the higher range (the 4D quantum universe). We call that dividing line "the speed of light", and nothing goes faster than light. So, if, for convenience, we were to temporarily set the speed of light at the value 20, then *everything* in our 3D universe would exist at temperatures between, say, 15 and 20, and *everything* in the 4D (quantum) universe would exist at temperatures between 20 and 25. And never the twain shall meet. Except at value 20, of course, which is a particle/black hole. Or, as we've just reenvisioned it, an energy bubble.

(There's one clarification I need to make: "temperature" for energy is defined in terms of *speed*. Temperature for water is defined in terms of energy, but temperature for energy can't be defined in terms of itself. So energy boils and freezes by going faster or slower. The accumulation of mass is what slows it down, what freezes it.)

Imagine we have a point on a line at value *0*. Let's call that point *x*. *x* lives *inside* the line, inside a 1D universe. But if *x* "escapes" the line, orthogonally, into a 2D universe—into a plane that the line is embedded in—we could represent that as: *(0)* => *(0,y)*.

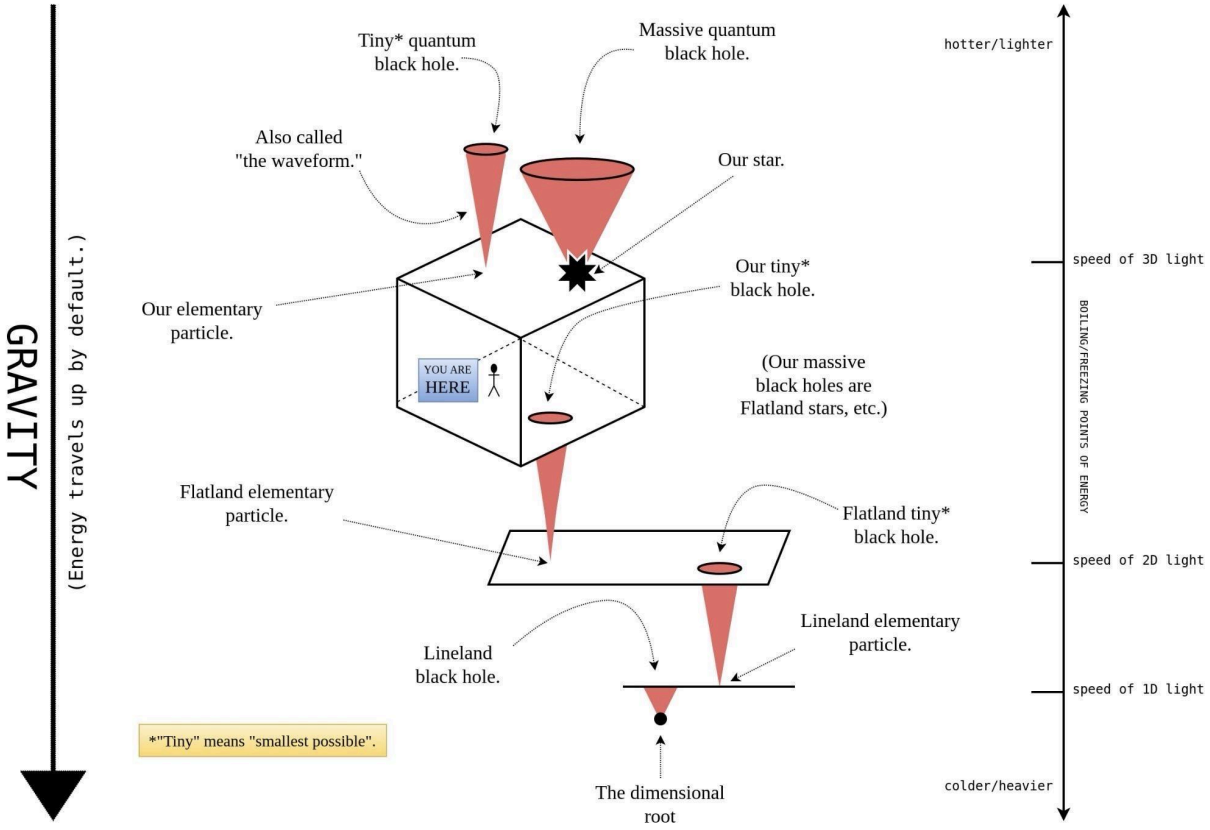
If we further assume that *when* this transition happens, *y* is undefined and remains undefined (aka, is in a superposition), then what we see in the plane is ripples extending out from *(0,0)*. That is, at every moment *t*-sub-*n*, *y* takes on a value in every direction in the plane at distance *n* from *(0,0)*.

The general rule then is that whenever a point in some n-dimensional universe jumps up into an n+1-dimensional universe, it moves in that next higher universe as its equivalent of a (growing) 2D circle.

That would mean that in our 3D universe, our points (our *particles*) jump like this: *(x,y,z)* => *(x,y,z,q)* with *q* undefined, and *(x,y,z,q)* moving as an expanding hypersphere, the 4D equivalent of a sphere. We refer to the 4D hypersphere's 3D shadow as a waveform.

The Shape of the Thing the Universe is Inside of

Put this all together and what do you get? You get something that looks like this:



The universe as a dimensional, n+1 dimensional worlds connected by black holes.

The shape in the diagram is one of connected n-dimensional universes, exploded for the purposes of inspection. You should think of the n-dimensional universes as sitting *inside* one another—as a point inside a line, inside a plane, etc. Each universe in the chain has a fixed number of dimensions *n*, and has connections to the n+1 and n-1 universes "above" and "below" it.

I don't know if there's an existing name for this structure, but I call it a *dimensional*. A dimensional is a meta-fractal, a mother of fractals. While a fractal is connectivity in *fractions* of dimensions, a dimensional is connectivity in full (*whole-numbered*) dimensions. The dimensional

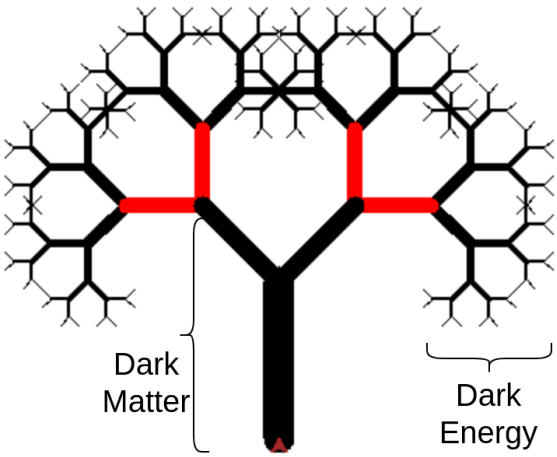
grows “vertically” up through n-dimensional worlds, and the fractal grows “horizontally” *inside* each individual n-dimensional world.

But the best way to think about this is in terms of phase changes. We know that inside our universe every element can be run through the solid, liquid, gas, and plasma states by simply turning up the temperature. Well, there are *meta*-states of matter as well. Self-referentially, our universe is in the *liquid* meta-state. The speed of light is the meta-*boiling*-point of matter, and the speed of a black hole, or whatever they call it (0 Kelvin?), is the meta-*freezing*-point. Energy boils off into the 4D quantum world, and freezes off, down a black hole, into the 2D “flatulum” world, for lack of a better term.

Matter and energy are the same thing (E equals mc-squared) because mass is nothing more than partially *frozen* energy. When there’s no space left whatsoever inside the atoms for the electrons to move around in, then the energy is *fully* frozen, and also gone—off into the universe below.

If a particle is an energy bubble boiling off, and it is, then a black hole—at its bottom, where we can’t see to—is a chunk of energy *ice*—and *somebody else’s* particle. We exist as *slush* in the liquid between the boiling and the freezing of 3D energy.

One Last Visual



The invisibility problem isn’t limited to black holes and particles; oh no, it barely begins there. A whopping 95% of the universe’s energy is invisible! *The math* says it must be there, but it can’t actually be detected—at all. 27% is “dark” *matter* and 68% is “dark” *energy*. And, again, since matter *is* energy (E equals mc-squared, again), it’s really all dark *energy*, but some of it’s been frozen into matter.

So let's re-imagine the previous diagram of the dimensional as a tree, growing up through dimensional worlds. The trunk represents the 1D world, Lineland. Out of it sprouts the first layer of branches. That's the 2D world, Flatland. The next level of branches, colored red, represents our 3D world. (Each red branch would be a galaxy cluster.)

Everything *below* our (red) level is energy that's relatively fixed and slow growing, so it's dark *matter*. Everything above our level is energy that's relatively dynamic and fast growing, so it's dark *energy*. As the tree grows, everything in it moves away from everything else, because that's the nature of growth.

The Biggest Problem in Physics

I made two big promises in the Abstract. First I promised that once you considered the possibility that particles and black holes were the same thing, it would be obvious to you that they were. Assuming I've delivered on that one—and by all means stop reading if I haven't—the second promise was that *that* realization would solve the biggest problem in physics.

Well, lucky for us, the biggest problem in physics is easy to describe. It goes like this. There are two completely separate and incompatible sets of mathematical formulas for the behavior of (1) particles and (2) everything else (which includes black holes). This is a problem because if, in the *real* world, particles interact with everything else seamlessly, and they do, then the math that describes them should too. But it doesn't, and lots of very smart people, including Einstein himself, have been unable to marry the two sets of formulas.

(Yes, I'm solving a problem Einstein couldn't. Would this even qualify as entertainment in 2024 if I weren't??? That damn Mr. Beast is out there prowling around.)

There's one more detail you need to know before you're ready to size this thing up with me, which is this: except for the giant incompatibility issue I've just described, everything else is absolutely *great* on both sides. Both sets of math are amazingly close to perfect in their given domains.

OK, *now* we can play the detective. Forget about the physics. We don't know the physics. What we *do* know is that we've got a system—it could be *any* system—with two perfectly-described, but non-integrating halves that *should be* integrating. *And*, the smartest people in the world can't for the life of themselves figure out how to *make* them integrate.

Clearly, the only way we're gonna crack this nut is if the solution is so simple that the physicists are overlooking it. In other words, we're gonna have to walk where only crackpots and geniuses dare go, without knowing which one we are, and with the odds heavily against genius. Are you ready?

Well, what if the two halves are *mirror images* of each other? What if both sets of formulas describe the same thing but one of them—namely the *particle* math—is being produced *looking*

into a mirror? What if, like Ginger Rogers, particle physicists are describing the interactions of *black holes,* backwards and in high heels?

I say they are. I say that the biggest problem in physics will eventually get solved by physicists returning to Einstein's gravity math (which is the math for the "everything else" half) and altering it so that black holes are *not* infinitely deep. They'll put a meta-square-root sign in there that marks the bottom of the black hole. That meta-square-root sign will act as a gateway into another universe. All energy that passes through the gateway will emerge as particles in a completely independent (and fully-embedded) universe with one less dimension. And the placement of those particles into that lower universe will be slightly and inevitably (pseudo-)random, given the many-to-one relationship inherent in the loss of dimensionality.

I say there's a reverse Schrödinger's equation lurking in Einstein's math, and when they find it, it pretty much punches my ticket to Stockholm. (Schrödinger's equation—a formula in the particle physics half of the math—performs the probabilistic guess as to where the nugget will reappear.)

The Analogy for Remembering This

You can strip down this analogy quite a bit; I like to dress things up.

You're flying down an empty highway in the passenger seat with your head out the window. You're skipping school with your very best friends on a warm and sunny spring day, senior year. You see the road signs go by: "Flatland, 3 miles", "Flatland, 2 miles", "Flatland, 1 mile." But the signs don't actually have the word "Flatland" on them. No, they've got a universal symbol instead. It's the-square-root-of-x.

When you finally hit the border, it's the mouth of a tunnel. Just before you enter, as you pull your head back inside, you flick your eyes up and read the sign: Black Hole Tunnel. Inside the tunnel, the car and everything *inside* the car get slowly squished flat. It tickles. You get spit out on the other end of the tunnel as flat versions of yourselves in a flat car. You immediately pull over, hop out and start trying to do simple stuff, like walk, and you laugh your flat asses off. Then you zip off through roads that feel like walls, praying you don't kill yourselves before you graduate.

On your way back to the tunnel, the signs are different. Now they show x-squared and “Particle Tunnel”.

And that, my friends, is how the universes are tied together (except that in reality, inside the tunnel you get squished down into a tiny flat *particle* and you’re dead as a doornail.)

Next week, when you skip school again, you’ll go the *other* way, up-dimension, and you’ll see the same signs, but in the reverse order—x-squared/Particle Tunnel on the way there, and the-square-root-of-x/Black Hole Tunnel on the way back.

Oh, that reminds me. While you’re there, would you do me a favor? If you happen to run across the particle physicists, would you yell something to them out the window for me? Would you yell, “You got *scooped*!!!” They love that. They’ll shout at the heavens through their clenched little fists and they’ll mutter to themselves through their gritted little teeth, “That damn Slippin Fall!”

Final Tidbits For Physicists

If I’m right:

1. It would mean that up to this point, doing quantum physics has been like figuring out the rules of basketball from beneath the court, privy only to what touches the floor. When the ball/foot/particle is touching the floor, it’s observable and a nugget. And when it isn’t, it’s unobservable and a wave. Slippin Fall stands in awe of the work you do, and the progress you make. He’s secretly ashamed he can’t do it himself, but don’t tell that to anyone. It’s your absolute prohibition on *interpretations* he takes issue with, and is benefiting *from*!
2. Please, try and remember exactly how you feel right now, and if we ever meet, tell me about it. Did you laugh? Out loud? I think I would have. Maybe with my head all the way back. “Air bubbles and ice cubes!!! BUT OF COURSE!!! It’s all *temperature* driven!!! *I* shoulda thoughta that!!!” But I’m not really sure I would have laughed. Life is funny, and funny has two sides. But it sure is funny as hell from over here, I can tell you that. (Or are you laughing, but—at *me*—and my simple oversimplifying mind??? *So pathetically*

out of his depth!!! I really don't know! But that would be great to hear about, too! Just how stupid *am* I? Oooooh, good stuff. The mathematical gulf you've left between us.)

3. Oh, how future generations are gonna howl at The Observer Effect. Can we completely wipe that entry from Wikipedia? Let's be clear about something. These are truths: if you poke a bubble with a pin, it's gonna burst; but just looking at the bubble is perfectly harmless. The choice of the word Effect belies the fact that we were *doubting* those truths—that we thought that *just maybe* it might be the case that reality fails to exist in those places where humans weren't looking at it! (You say you can't see the bubble if you don't poke it with the pin? Well that's your problem. It's still the pin and not the fact that you wanna look at it that's doing the damage to the bubble.) Or can we at least change the official name to The Observer *Paradox*?
4. It would mean that the freaky quantum universe is a *place*, a place we're *submerged inside of*, not some locked mathematical closet. That might mean we can send a probe off into it. And that probe might return almost immediately, having traveled very far, as their slowest speed would be faster than our fastest.
5. It would further clarify our place in the totality by embedding our universe in something bigger—a dimensional. The universe could then assume its rightful place next to the atom on the island of misfit terminal objects.
6. It would mean that, from above, our universe most closely resembles *a neuron*. We reside in the axon. The Big Bang was an incoming action potential—a sudden incoming torrent of positively-charged ions, signaling a change in: a single bit in some giant brain! (Oh, I really can't stop laughing now.) Our particles and black holes are the nerve endings at the end of the axon, shunting the ions off towards other neurons in two directions: *up*-dimension—with the help of entropy (boiling); and *down*-dimension—with the help of gravity and electromagnetism (freezing).
7. It would mean we should be expecting another Big Bang at some point. In the same place. Wait for it. (It's all just too rich for extended contemplation.)